Ideation Phase
Literature Survey

Date	02 November 2022
Team ID	PNT2022TMID27707
Project Name	Real-Time Communication System Powered by AI for Specially Abled
Maximum Marks	2 Marks

Literature Survey on Real-Time Communication Powered by AI for Specially Abled Person

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Abstract

In our society, we have people with disabilities. Technology is developing day by day but no significant developments are undertaken for the betterment of these people. Communication between a deaf mute and a normal person has always been a challenging task. It is very difficult for mute people to convey their message to normal people. Since normal people are not trained in hand sign language. In emergency times conveying their message is very difficult. The human hand has remained a popular choice to convey information in situations where other forms like speech cannot be used. Voice Conversion System with Hand Gesture Recognition and translation will be very useful to have a proper conversation between a normal person and an impaired person in any language.

The project aims to develop a system that converts sign language into a human-hearing voice in the desired language to convey a message to normal people, as well as convert speech into understandable sign language for the deaf and dumb. We are making use of a convolution neural network to create a model that is trained on different hand gestures. An app is built which uses this model. This app enables deaf and dumb people to convey their information using signs which get converted to human-understandable language and speech is given as output.

S.NO	TITLE	AUTHOR	YEAR& PUBLICATIONS	REMARKS
1.	Sign language to speech conversion	P. Vijayalakshmi and M. Aarthi	2016 International Conference on Recent Trends in Information Technology (ICRTIT)	They have designed a sensor-based gesture recognition module that recognizes English alphabets.
2.	Conversion of Sign Language into Text	Mahesh Kumar N B	International Journal of Applied Engineering Research ISSN 0973-4562 Volume 13, Number 9 (2018)	In this model, the Linear Discriminant Analysis (LDA) algorithm was used for gesture recognition and recognized gesture is converted into text and voice format.
3.	Real time conversion of sign language to speech and prediction of gestures using Artificial Neural Network	Mahesh Kumar N B Abey Abraham, V Rohini	Procedia Computer Science, Volume 143, 2018	The proposed device makes use of an Arduino Uno board, a few flex sensors and an Android application to enable effective communication amongst the users.
4.	Automated Speech to Sign language Conversion using Google API and NLP	Bharti, Ritika and Yadav, Sarthak and Gupta, Sourav and B, Rajitha	Proceedings of the International Conference on Advances in Electronics, Electrical & Computational Intelligence (ICAEEC) 2019	The proposed system first recognizes the speech, the second converts it to text, third matches tokenized text with the visual sign word library (videos of sign language), fourth concatenates all the matched videos ac-cording to the text recognized and finally display the merged video to the deaf/dumb person.
5.	Virtual assistant using python	Damarla.k	2021	To help physically impaired people we came up with an idea of erecting a voice adjunct with continues commerce point.